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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/811,609

03/20/2001

Nobuhiko Noma

P20803

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10/25/2004

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EXAMINER

FLANAGAN, KRISTA M

ART UNIT

PAPER NUMBER

2631

DATE MAILED: 10/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/811,609

Applicant(s)

NOMA ET AL.

Examiner

Krista M. Flanagan

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. JP 200-094259, filed on March 30, 2000. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Figure 4, reference character S49. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The abstract of the disclosure is objected to because of the following.

- a. On lines 2 - 3, the phrase “sampling data 1 data unit ahead” is suggested to be changed to “sampling data one data unit ahead”.
 - b. On lines 5 and 7, “CP” is suggested to be changed to “cyclic prefix”.
- Correction is required. See MPEP § 608.01(b).

4. The disclosure is objected to because of the following informalities:

- a. Throughout the specification, the phrase “1 data unit” is suggested to be changed to “one data unit”.
 - b. On page 1, line 21, “fibers are increasingly introducing forbackbone” is suggested to be changed to “fibers are increasingly being introduced for use as the backbone”.
 - c. On page 4, lines 7-8, “wherein one example is illustrated by way of example” is suggested to be changed to “wherein one embodiment is illustrated by way of example”.
 - d. On page 5, line 10, “a subscriber residence, a user residence, are” is suggested to be changed to “a subscriber residence (user residence) are”
 - e. On page 6, lines 4 and 5, “auto” is suggested to be changed to “automatic”.
 - f. On page 9, line 11, “By the way,” is suggested to be omitted.
 - g. On page 10, lines 4 and 26, “1 sample” is suggested to be changed to “one sample”.
- Correction is required. See MPEP § 608.01(b).

Claim Objections

5. Claims 1-11 are objected to because of the following informalities:

- a. In claims 1-11, “1 data unit” is suggested to be changed to “one data unit”.

b. In claims 1-11, "CP" is suggested to be changed to "cyclic prefix".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

7. Claims 1,5 and 9 recite the limitation "said addition value" in claim 1, last line; claim 5, lines 4 and 5; and claim 9, second to last line. There is insufficient antecedent basis for this limitation in the claims.

8. Claims 3 and 11 recite the limitation "said data unit" on the fourth lines of both claims 3 and 11. There is insufficient antecedent basis for this limitation in the claims.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-5 and 9-11 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by International Publication No. WO 99/17493 to Do.

11. As to the claimed modem apparatus in the preamble of claims 1-5, the modem apparatus is not given patentable weight because the body of the claim does not reflect the modem.

Therefore "modem apparatus" is an intended use for the communication method.

12. Referring to claim 1, Do discloses an apparatus comprising a communication control method that samples a reception signal, calculates a difference between present sampling data and sampling data one data unit ahead and cumulatively adds up the squares of the difference values calculated for every sampling, and detects the minimum value threshold (See page, lines 13-15) that is virtually 0 (See page 5, lines 25-27) based upon the sample number whereby confirming the position of the CP signal (See page 4, lines 5-11).

13. Referring to claim 2, Do discloses a communication control method where the boundary between the cyclic prefix signal and the signal body is recognized based upon the sample number of the minimum value of addition values detected after reception of the initializing signal is started (See page 6, lines 3-9).

14. Referring to claim 3, Do discloses a communication control method where when a minimum value is detected plurality of times at intervals of the number of samples of the data unit, the boundary between the cyclic prefix signal and the signal body is recognized based on the sample number of the minimum value (See page 6, lines 5-9).

15. Referring to claim 4, Do discloses a communication control method where the boundary between the cyclic prefix signal and the signal boundary is recognized based on the sample number with which addition values detected after the reception of the initializing signal is started virtually become zero (See page 5, lines 25-27).

16. Referring to claim 5, Do discloses a communication control method where the boundary between the cyclic prefix signal and the signal boundary is recognized based on the sample number of the minimum value with which the addition value falls below a predetermined threshold (See page 5, lines 25-27).

17. Referring to claim 9, Do discloses a communication control method that samples a reception signal, calculates a difference between present sampling data and sampling data one data unit ahead and cumulatively adds up the squares of the difference values calculated for every sampling, and detects the minimum value threshold (See page, lines 13-15) that is virtually 0 (See page 5, lines 25-27) based upon the sample number whereby confirming the position of the CP signal (See page 4, lines 5-11).

18. Referring to claim 10, Do discloses a communication control method where the boundary between the cyclic prefix and the signal body is recognized based upon the sample number of the minimum value of addition values detected after reception of the initializing signal is started (See page 6, lines 3-4).

19. Referring to claim 11, Do discloses a communication control method where when a minimum value is detected plurality of times at intervals of the number of samples of the data unit, the boundary between the cyclic prefix and the signal body is recognized based on the sample number of the minimum value (See page 6, lines 5-9).

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Do,
International Publication No. 99/17493.

22. Referring to claims 6-8, Do teaches the claimed subject matter as indicated with respect to claim 1. Do fails to teach an OFDM being clearly applied to the environment of a modem or xDSL. However the use of OFDM in an environment of a modem or xDSL, wherein the broadband is divided into a multi-carrier, as is the situation with OFDM is well known in the art. The use of OFDM of Do in the environment of a modem or xDSL will enable the system to minimize co-channel interference among the multi-carrier. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to use OFDM in the environment of a modem or xDSL.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Rosenlof et al. US Patent No. 6,785,349 discloses detecting frame boundaries for data frames that have been periodically extended by calculating a maximum value and loading a pointer based upon that maximum value.
- b. Dagdeviren et al. US Patent No. 6, 519, 291 discloses detecting comparing samples to detect a cyclic prefix.
- c. Miao et al. US Patent No. 6, 279, 022 discloses detecting a cyclic prefix by summing a channel estimate over a pre-defined cyclic prefix range.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krista M. Flanagan whose telephone number is (571) 272-2203.

The examiner can normally be reached on Monday - Friday, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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TESFALDET BOCDRE
PRIMARY EXAMINER

